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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/621,094	07/14/2003	Henry Huang	Huang I	9271
7590	05/05/2005		EXAMINER PETKOVSEK, DANIEL J	
Wendy W. Koba P.O. Box 556 Springtown, PA 18081			ART UNIT 2874	PAPER NUMBER
DATE MAILED: 05/05/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/621,094

Applicant(s)

HUANG, HENRY

Examiner

Daniel J. Petkovsek

Art Unit

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on IDS filed November 19, 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on July 14, 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 10/10/03, 11/19/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

This office action is in response to the most recent communication from Applicant, the information disclosure statement filed November 19, 2004. Claims 1-7 are pending.

#### ***Information Disclosure Statement***

1. The prior art documents submitted by Applicant in the Information Disclosure Statements filed on October 10, 2003, and November 19, 2004, have been considered and made of record (note attached copy of forms PTO-1449).

#### ***Drawings***

2. New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because the drawings are hand-written and informal. Formal drawings are required. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

#### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1 and 6 are rejected under 35 U.S.C. 102(e) as being anticipated by Stepanov et al. US 2004/0042725 A1.

Stepanov et al. US 2004/0042725 A1 teaches (ABS, Figs. 7 and 12, [0071], [0087]-[0088], **see claim 1**) a passively compensated optical grating device 700 comprising: a support frame with a *relatively* low coefficient of thermal expansion, the support frame having a floor 716, first fixed-in-place portion 712, and a lever arm 708 as a second movable sidewall; an optical fiber grating 710 attached between the first fixed portion and the lever arm; and an expansion element 702 formed of a material having a *relatively* high coefficient of thermal expansion, the expansion element 702 attached to the support frame and in contact with the lever arm 708, so that changes in the expansion element as a result of temperature changes results in a rotation of the lever arm to adjust for strain in the optical fiber grating (to nullify any wavelength changes), which clearly, fully meets Applicant's claimed limitations.

Regarding claim 6, the expansion arm (702, 906) is disposed between the fixed in place portion and the lever arm.

### *Claim Rejections - 35 USC § 103*

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2-5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stepanov et al. US 2004/0042725 A1.

Stepanov et al. US 2004/0042725 A1 teaches (ABS, Figs. 7 and 12, [0071], [0087]-[0088], **see claim 1**) a passively compensated optical grating device 700 comprising: a support frame with a *relatively* low coefficient of thermal expansion, the support frame having a floor

Art Unit: 2874

716, first fixed-in-place portion 712, and a lever arm 708 as a second movable sidewall; an optical fiber grating 710 attached between the first fixed portion and the lever arm; and an expansion element 702 formed of a material having a *relatively* high coefficient of thermal expansion, the expansion element 702 attached to the support frame and in contact with the lever arm 708, so that changes in the expansion element as a result of temperature changes results in a rotation of the lever arm to adjust for strain in the optical fiber grating (to nullify any wavelength changes).

Stepanov et al. '725 does not explicitly teach the specific materials for the low CTE frame (claims 2 and 3 – Kovar, Invar) or the high CTE expansion element (claims 4 and 5 – aluminum alloy, brass). However, since these materials are well-known in the art for having durable/useful properties and having either low or high thermal coefficients of expansion, a person having ordinary skill in the art at the time the invention was made would have recognized the use of these well known materials for this purpose. A person having ordinary skill in the art would recognize the use of the specific claimed elements for the purpose of durability and functionality of the optical system.

Regarding claim 7, Stepanov et al. '725 does not explicitly teach that the high CTE element comprises a disc within the frame. A person having ordinary skill in the art at the time the invention was made would have recognized that a number of shapes for the high CTE expansion element would yield substantially the same result. Using an expansion arm or a disc shaped element to impinge upon the lever arm would yield the same result, rotating the lever arm for the purpose of adjusting a strain in the optical fiber grating to accommodate for wavelength changes due to a temperature change.

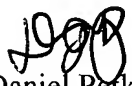
*Conclusion*

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure, with respect to the state of the art of thermal compensation devices for optical fiber gratings, having changing positions to accommodate for strain: PTO-892 form references B-E.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel J. Petkovsek whose telephone number is (571) 272-2355. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Daniel Petkovsek  
April 26, 2005

  
AKM ENAYET ULLAH  
PRIMARY EXAMINER